



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,537	02/10/2004	Patrick Ward	25968	1103

20529 7590 07/25/2006

NATH & ASSOCIATES  
112 South West Street  
Alexandria, VA 22314

EXAMINER

ROMAN, LUIS ENRIQUE

ART UNIT	PAPER NUMBER
----------	--------------

2836

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/774,537

Applicant(s)

WARD, PATRICK

Examiner

Luis Roman

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 02 May 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

Applicant amendment filed on 05/02/06 has been entered. Accordingly claims 5, 7-8 & 10 have been kept original, claims 1-4, 6 & 9 have been amended and claim 11 has been cancelled. No new claims were added. It also included remarks/arguments.

#### ***Claim Objections***

Regarding claims 1 & 7 are objected to, because the usage of the term "***substantially***" which makes the claim unclear.

In order to further examine claim 1, the examiner will assume that there is inductive coupling from the detecting means.

In order to examine claim 7, the examiner will assume that the impedance is reactive. Proper correction is required.

#### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-7** are rejected under 35 U.S.C. 102(b) as being anticipated by Howell (US 4150411).

Regarding claim 1 Howell discloses a residual current device (RCD) (Fig.1 element 10) including means for sensing a differential current flowing in mains supply live (L) and neutral (N) conductors and for disconnecting the supply from a load when the differential current exceeds a predetermined level (Col. 8 lines 41-50), the device further including means for detecting a double grounded neutral fault, said detection

Art Unit: 2836

means comprising a circuit connecting the live and neutral conductors on the load side of the sensing means with inductive coupling to the live and neutral conductors such that a current is caused to flow between the live and neutral conductors, said current being, at least intermittently, of sufficient amplitude and duration as to cause disconnection of the supply in the presence of a double grounded neutral as a result of reduction in the amplitude of said current flowing through the sensing means caused by a portion of said current flowing through the grounded neutral on the load side of the sensing means (Col. 9 lines 25-41).

Regarding claim 2 Howell discloses an RCD as claimed in claim 1.

Howell further discloses wherein said current is alternately on and off, the amplitude and duration of said current during each on period being sufficient to cause said disconnection (Col. 9 lines 25-41).

Regarding claim 3 Howell discloses an RCD as claimed in claim 1.

Howell further discloses wherein said current alternates between periods of relatively higher and lower amplitude, the amplitude and duration of said current in each higher amplitude period being sufficient to cause said disconnection (Col. 9 lines 25-41).

Regarding claim 4 Howell discloses an RCD as claimed in claim 2.

Howell further discloses wherein the periods for which said intermittent current flows is determined by a timing circuit powered from the live and neutral conductors (Abstract).

Regarding claim 5 Howell discloses an RCD as claimed in claim 4.

Howell further discloses wherein the timing circuit forms part of a single integrated circuit, which also responds to a residual current above the predetermined level to initiate the disconnection of the supply (Col. 3 lines 49-60).

Regarding claims 6 & 7 Howell discloses an RCD as claimed in claim 1 & 6 respectively.

Art Unit: 2836

Howell discloses a load connected between the live and neutral conductors (Fig. 1 elements (L, LOAD, N)).

It is well known in the art that a load is in general an impedance which involves a combination of resistors, capacitors and inductors, if the load is predominantly composed of inductance and/or capacitance then would be a reactive load.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claim 8** is rejected under 35 U.S.C. §103(a) as being unpatentable over Howell (US 4150411) in view of Zylstra et al. (US 4538194).

Regarding claim 8 Howell discloses an RCD as claimed in claim 6.

Howell does not disclose wherein a thermal switch is connected in series with the impedance.

Zylstra et al. teaches the usage of a thermal switches (Col. 3 lines 49-61 & Fig. 1 element 48).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Howell device with the Zylstra et al. teachings in order to provide an adequate means to protect a load/circuitry from excessive overheat due to the conduction of high current..

**Claim 9** is rejected under 35 U.S.C. §103(a) as being unpatentable over Howell (US 4150411) in view of Pascoe (US 4417202).

Regarding claim 9 Howell discloses an RCD as claimed in claim 1.

Howell does not disclose including means for providing a visual indication when the current is flowing.

Pascoe teaches a ground detector having a led as an indicator (Col. 8 lines 20-34).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Howell device with the Pascoe teachings in order to provide an adequate means to alert the user that the device is working properly.

**Claim 10** is rejected under 35 U.S.C. §103(a) as being unpatentable over Howell (US 4150411) in view of Howell et al. (US 3953766).

Regarding claim 10 Howell discloses an RCD as claimed in claim 1.

Howell does not disclose wherein the double-grounded neutral detection means is contained in a common housing with the sensing means.

Howell et al. teaches wherein the detection and sensing devices are in one housing (Fig. 1 element 10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the Howell device with the Howell et al. teachings in order to provide a compact device by including the sensing and detecting devices in one casing to improve size of the equipment.

The indicated allowability of claim 8 is withdrawn in view of the newly discovered reference(s) to Zylstra et al. (US 4538194). See above for the rejection based on the newly cited reference(s).

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. "Ground fault Interrupter Utilizing a Single Transformer" Howell (US 4001646).

Applicant's arguments with respect to claims 1-7 and 9-10 have been considered but are moot in view of the new ground(s) of rejection.

**Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis E. Román whose telephone number is 571-272-5527. The examiner can normally be reached on Mon – Fri from 7:15 AM to 3:45 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2800 x 36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from Patent Application Information Retrieval (PAIR) system.

Status information for unpublished applications is available through private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

LR/071806

Luis E. Román  
Patent Examiner  
Art Unit 2836

  
BRIAN SIRCUS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800